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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/519,282	03/07/2000	Daniel E Lenoski	97437	9726

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EXAMINER	
MOORE, IAN N	

ART UNIT	PAPER NUMBER
2661	7

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/519,282	LENOSKI ET AL.	
	Examiner	Art Unit	
	Ian N Moore	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

   - Both "line card **270**" (page 8, line 4) and "input/output interface **270**" (page 8, line 5) are improperly referred by using the label number "270".
   - Input/output interface is improperly labeled as "Input/output interface **270**" (page 8, line 5) and "Input/output interface **290**" (page 9, line 7).

   Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Teraslinna (U.S. Patent 5,229,990).

Regarding Claim 1, Teraslinna '990 discloses a method performed by a packet switching system, the method comprising: a plurality of input components of the packet switching system (Lines in 100-1 to 159-1, Fig. 1) sending a plurality of packets (self-routing

networks are packet switching networks that use information carried by the packets themselves to route the packets there through; see col. 6, line 16+) to a plurality of output components (Lines out 100-2 to 159-2, Fig. 2) over a plurality of interconnection networks (Nodes 340 to 389, Fig. 1 and Fig. 2); the packet switching system recognizing an error within the packet switching system; and the packet switching system notifying the plurality of input components of the error (noted that the response of the system of FIG. 1 to a failure of a line circuit is shown in FIG. 8. When failure of a line circuit is detected, the line circuits 200 to 269 are notified, at step 800; see col. 5, line 68+).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 2,3,4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teraslinna '990 in view of Lino (U.S. Patent 6,418,115).

Regarding Claim 2, Teraslinna '990 discloses notifying the plurality of input components as described in Claim 1 above.

However, Teraslinna '990 does not explicitly discloses sending a packet containing an indication of the error (malfunction flag, see Lino '115, Fig. 12A) to each of

the plurality of input components (i.e. when a malfunction occurs in the switch network 1, the control unit 2 sets a final stage malfunction flag and produces input and output unit changing information. The final stage malfunction flag is set for selecting one of the ways to bypass the malfunctioning switch by either changing the input address or output address; see Lino '115, col. 5, line 60+; moreover, the routing information changing unit 21 changes the contents of a frame format (header) of the communication information when a malfunction occurs in the switch network 1, based on the input and output unit changing information sent from the control unit 2, see Lino '115, col. 9, line 27+).

This limitation is taught by Lino '115. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 with Lino '115 for the purpose of providing an exchange in which, when a malfunction occurs in one of a plurality of switches, a transmission path bypassing the malfunctioning switch can be formed in the absence of a spare switch in the exchange so as to decrease weight and size of the entire system; see Lino '115, col. 2, line 36+. The motivation being that by notifying the remotes nodes regarding the malfunction and to by pass the fail node, it can decrease the cost.

Regarding Claim 3, Teraslinna '990 discloses notifying the plurality of input components as described in Claim 2 above.

However, Teraslinna '990 does not explicitly discloses sending a packet containing an indication of the error (malfunction flag, see Lino '115, Fig. 12A) to each of the plurality of input components (i.e. when a malfunction occurs in the switch network 1,

the control unit 2 sets a final stage malfunction flag and produces input and output unit changing information. The final stage malfunction flag is set for selecting one of the ways to bypass the malfunctioning switch by either changing the input address or output address; see Lino '115, col. 5, line 60+; moreover, the routing information changing unit 21 changes the contents of a frame format (header) of the communication information when a malfunction occurs in the switch network 1, based on the input and output unit changing information sent from the control unit 2, see Lino '115, col. 9, line 27+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 2 above.

Regarding Claim 4, Teraslinna '990 does not explicitly disclose sending a packet to a broadcast component of the packet switching system, and further comprising the broadcast component (Input Switching Unit 3, see Lino '115 Fig. 10) broadcasting a status notification packet containing an indication of the error (Flag changing unit 22, see Lino '115 Fig. 10) to the plurality of input components (when a malfunction occurs in one of the switches in the switch network 1, the selecting unit 11 selects a transmission path which bypasses the malfunctioning switch based on the input table (1) information, the output table (1) information, the input table (2) information and the output table (2) information. The final stage malfunction flag producing unit 12 sends a notification to the input switching unit 3 so as to set the final stage malfunction flag to "ON" when switching is performed by the output switching unit 4, see Lino '115, col. 7, line 6; and The routing information changing unit 21 changes the contents of a frame format (header) of the communication information when a

malfunction occurs in the switch network 1, based on the input and output unit changing information sent from the control unit 2. If the malfunctioning switch is included in the first stage, the routing information changing unit 21 changes the input address, see Lino '115, col. 9, line 27+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 2 above.

Regarding Claim 5, Teraslinna '990 does not explicitly discloses sending a second packet to a second broadcast component of the packet switching system, and further comprising the second broadcast component (output switching unit 4, see Lino '115 Fig. 11) broadcasting a second status notification packet containing a second indication of the error to the plurality of input components (the output switching unit 4 switches an outputting direction of the communication information to be sent to one of the output addresses, when a malfunction occurs in the switch network 1, based on the input and output unit changing information and the final stage malfunction flag which are sent from the control unit 2. The final stage malfunction flag determining unit 31 determines the status of the final stage malfunction flag contained in the frame format of the communication information. When a result of the determination of the final stage malfunction flag determining unit 31 indicates "ON", the switch 32 changes the output address based on the routing information contained in the frame format of the communication information; see Lino '115, col. 9, line 56+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 2 above.

4. Claim 3, 4, and 5 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Teraslinna '990 in view of Azuma (U.S. Patent 6,430,150).

Regarding Claim 3, Teraslinna '990 discloses notifying the plurality of input components as described in Claim 1 above.

However, Teraslinna '990 does not explicitly discloses sending a packet containing an indication of the error to each of the plurality of input components (in the SONET network (the standard transport network in the United States), a node in the downstream of a failed location may receive an L-AIS (line-alarm indication signal) or an LOF (loss of frame) signal. A node in the upstream of the failed location may receive a FERF (far end receive failure) signal so as to recognize that a failure has occurred. The node that detected the failure prepares an alarm message and broadcasts the same in order to notify all the nodes in the network of the failure, see Azuma '150, col. 4, line 42+).

This limitation is taught by Azuma '150. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 with Azuma '150 for the purpose of providing a telecommunication node, a restoration method and a telecommunication network, wherein the aforementioned problems are eliminated; see Azuma '150, col. 1, line 62+). The motivation being that by providing

information relating to a failure, it can determine alternate paths, which decreases the cost of the system.

Regarding Claim 4, Teraslinna '990 does not explicitly discloses sending a packet to a broadcast component of the packet switching system, and further comprising the broadcast component broadcasting a status notification packet containing an indication of the error to the plurality of input components (In the example of FIG. 2A, a failure has occurred on the link between node A and node C. Node A and node C at the respective ends of the failed link detect the failure and enter a failure processing mode. Nodes A and C broadcast an alarm message for notifying the other nodes that a failure has occurred. The process executed so far concerns the broadcast phase, see Azuma '150, col. 5, line 10+. The alarm message detecting part 10 detects an alarm message transmitted via the maintenance message transmission line 34 and passes the same to the failure type determining part 12. The failure type determining part 12 determines the location and type of the failure by referring to the information included in the alarm message, the physical topology information and the logical topology information; see Azuma '150, col. 7, line 6).

This limitation is taught by Azuma '150. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Azuma '150 for the same reason stated in Claim 3 above.

Regarding Claim 5, Teraslinna '990 does not explicitly discloses sending a second packet to a second broadcast component of the packet switching system, and further comprising the second broadcast component broadcasting a second status notification packet containing a second indication of the error to the plurality of input components (noted that Nodes A and C enter the computation phase after broadcasting the alarm message. Node B receives the alarm message broadcast from node A and node C. After recording the content of the message, node B broadcasts the alarm message; see Azuma '150 col. 5, line 17+).

This limitation is taught by Azuma '150. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Azuma '150 for the same reason stated in Claim 3 above.

5. Claim 6,7,8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teraslinna '990 in view of Lino (U.S. Patent 6,418,115).

Regarding Claim 6, Teraslinna '990 does not explicitly discloses each of the plurality of input components updating one or more status data structures in response to receiving a notification of the error (note that input table (1) storing unit 7 serves as a storing means for storing an input table (1) information as predetermined routing information. The input table (1) information is referred to when the malfunctioning switch is included in the malfunction stage (a) (the first stage) of the switch network 1 so as to change a transmission path to bypass the malfunctioning switch, see Lino '115, col. 6, line 33+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the system as taught by Teraslinna '990 and Lino '115 for the same reason stated in Claim 2 above.

Regarding Claim 7, Teraslinna '990 does not explicitly discloses determining which of a plurality of paths leading to a destination output component over which to send a particular packet, the path determined by referencing the one or more status data structures (note that output table (1) information is referred to when the malfunctioning switch is included in the malfunction stage (c) (the final stage) of the switch network 1 so as to change a transmission path to bypass the malfunctioning switch. That is, the output table (1) storing unit 10 stores the output table (1) information which indicates each switch in the switch network 1 in relation to transmission paths each of which bypasses each switch in the switch network 1; see Lino '115, col. 6, line 45+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 2 above.

Regarding Claim 8, Teraslinna '990 does not explicitly discloses each of the plurality of input component references its one or more status data structures in determining which of a plurality of paths leading to a destination output component over which to send a particular packet (note that output table (1) information is referred to when the malfunctioning switch is included in the malfunction stage (c) (the final stage) of the switch

network 1 so as to change a transmission path to bypass the malfunctioning switch. That is, the output table (1) storing unit 10 stores the output table (1) information which indicates each switch in the switch network 1 in relation to transmission paths each of which bypasses each switch in the switch network 1; see Lino '115, col. 6, line 45+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 2 above.

Regarding Claim 9, Teraslinna '990 does not explicitly discloses one or more data structures include an output availability table (output table 10, see Lino '115 Fig. 5) to indicate whether a possible path through the packet switching system from the input component to a particular destination is available (note that the selecting unit 11 serves as a path selecting means for selecting a transmission path which bypasses a malfunctioning switch. That is, when a malfunction occurs in one of the switches in the switch network 1, the selecting unit 11 selects a transmission path which bypasses the malfunctioning switch based on the input table (1) information, the output table (1) information, the input table (2) information and the output table (2) information; see Lino '115, col. 6, line 66+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 2 above.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teraslinna '990 and Lino '115 as applied to claim 6 above, and further in view of in view of Galand (U.S. Patent 6,424,624).

Regarding Claim 10, both Teraslinna '990 and Lino '115 disclose disabling at least one of the plurality of input components from sending packets to a particular destination of the packet switching system utilizing a number of possible paths through the packet switching system leading to a particular destination (noted that the response of the system of FIG. 1 to a failure of an edge node is shown in FIG. 7. When a failure of a node of an edge stage (i.e., of stage 1 or 3) is detected, line circuits 200 to 269 of rows 1 to (N+1) are notified, at step 700. The notification identifies the one of the rows 1 to N which failed, i.e., in which the failed node is located. The line circuits serving the failed row are disabled, at steps 701 to 702, and the line circuits serving all rows below the failed one are caused to switch their input and output connections from the line which they normally serve to the line that is normally served by the corresponding line circuit of the preceding row, at steps 703 to 704. As a result, line circuits 260 to 269 which serve row (N+1) become activated; see Teraslinna '990, col.6, Line 43+).

Both Teraslinna '990 and Lino '115 does not explicitly teach a number of possible paths through the packet switching system leading to a particular destination "**falls below a predetermined threshold value**" (note that Traffic congestion is declared when predefined threshold(s) are reached in the transmit adapter port (303) queues (309), see Galand '624, col. 7, line 56+).

This limitation is taught by Galand '624. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Galand '624 with Teraslinna '990 and Lino '115 for the purpose of checking the traffic by detecting congestion in any node of the network and then monitor the traffic flow accordingly on a port-to-port basis, while optimizing the network by complying with the requirements to avoid the drawbacks as indicated in the prior listed criteria, e.g. by minimizing traffic overhead, and yet enabling a smooth and flexible congestion control; being insensitive to misbehaving source users, and yet enabling a control of behaving sources at almost no additional cost; being perfectly implementable and rather not complex; see Galand '624, col. 6, line 16+. The motivation being that by thresholding, it can optimize the transmission while avoiding the congestion in the network.

7. Claim 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teraslinna '990 in view of Lino (U.S. Patent 6,418,115).

Regarding Claim 11, Teraslinna '990 does not explicitly disclose one or more data structures include a fault indication for a first output component over a first interconnection network of the plurality of interconnection networks, and further comprising sending a first packet over the first interconnection network to a second output component (note that FIG. 14 is a flowchart of an operation of the exchange according to the present embodiment when the exchange is in a normal condition or when a malfunction occurs in the switch network 1 as shown in FIGS. 15A and 15B, 16A and 16B, 17A and 17B, and 18A and

18B. In the operation shown in FIG. 14, it is assumed that the communication information having routing information "000111" in the frame format is input, in step S1, to the input address "000" of the input switching unit 3 when the exchange is normally operated. The communication information is input to the input address "000" of the switch network 1 as shown in FIGS. 15A, 16A, 17A and 18A via the routing information changing unit 21, the final stage malfunction flag changing unit 22 and the switch 23 in the input switching unit 3; see Lino '115, col. 11, line 12+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 2 above.

Regarding Claim 12, Teraslinna '990 does not explicitly disclose one or more data structures include a link availability table to indicate which of a plurality of outputs of a particular input component are available (note that a storing unit which stores table information indicating a plurality of routes each of which bypasses one of the switches in the switch network, each of the routes being indicated in relation to one of the inputs and outputs of the switch network; see Lino '115, col. 3, line 30+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 2 above.

8. Claim 13,14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teraslinna '990 in view of Lino '115.

Regarding Claim 13, Teraslinna '990 discloses a packet switching system (Lines in 100-1 to 159-1, Fig. 1) comprising: a plurality of input components (Lines in 100-1 to 159-1, Fig. 1; self-routing networks are packet switching networks that use information carried by the packets themselves to route the packets therethrough; see col. 6, line 16+); a plurality of output components (Lines out 100-2 to 159-2, Fig. 2); and a plurality of interconnection networks (Nodes 340 to 389, Fig. 1 and Fig. 2), each of the plurality of interconnection networks coupled to each of the plurality of input components and to each of the plurality of the output components to provide a plurality of paths between each of the plurality of input components and the plurality of output components; at least one of the plurality of input components includes an indication of which interconnection networks the at least one input component may send packets through to reach a particular output component (noted that he switching system comprises a switching network 300 having a plurality of switching nodes 340 to 389 arranged into a matrix, and a plurality of line (or trunk) circuits 200 to 269 which interface switching network 300 to telecommunication lines 100 to 159. Lines 100 to 159 are bidirectional, and so are line circuits 200 to 269. Nodes 340 to 389 are arranged into a regular matrix of rows 1 to (N+1) and columns, or stages, 1 to 3. Each node 340 to 389 is a symmetrical switching node having (N+1) inputs and (N+1) outputs-- (N+1) equal to 32 being common in the industry. Nodes 340 to 389 are conventional self-routing network nodes. Each receives at its inputs packets that carry their own destination address

information. A node examines the address information of each received packet and, based on that information, routes the packet to one of its outputs; see Teraslinna '990, col.5, Line 5+).

Teraslinna '990 does not explicitly discloses each of the plurality of input components maintaining **a fault data structure** (malfunction flag, see Lino '115, Fig. 12A); wherein **the fault data structure** of at least one of the plurality of input components includes an indication of which interconnection networks the at least one input component may send packets through to reach a particular output component (when a malfunction occurs in the switch network 1, the control unit 2 sets a final stage malfunction flag and produces input and output unit changing information. The final stage malfunction flag is set for selecting one of the ways to bypass the malfunctioning switch by either changing the input address or output address; see Lino '115, col. 5, line 60+; moreover, the routing information changing unit 21 changes the contents of a frame format (header) of the communication information when a malfunction occurs in the switch network 1, based on the input and output unit changing information sent from the control unit 2, see Lino '115, col. 9, line 27+).

This limitation is taught by Lino '115. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 with Lino '115 for the purpose of providing an exchange in which, when a malfunction occurs in one of a plurality of switches, a transmission path bypassing the malfunctioning switch can be formed in the absence of a spare switch in the exchange so as to decrease weight and size of the entire system; see Lino '115, col. 2, line 36+. The motivation being that by notifying the remotes nodes regarding the malfunction and to by pass the fail node, it can decrease the cost.

Regarding Claim 14, Teraslinna '990 discloses, "notifying the plurality of input components of the problem," (noted that the response of the system of FIG. 1 to a failure of a line circuit is shown in FIG. 8. When failure of a line circuit is detected, the line circuits 200 to 269 are notified, at step 800; see col. 5, line 68+).

Teraslinna '990 does not explicitly disclose a broadcast mechanism (Input Switching Unit 3, see Lino '115 Fig. 10) to receive an indication of a problem (Flag changing unit 22, see Lino '115 Fig. 10) within the packet switching system.

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 13 above.

Regarding Claim 15, Teraslinna '990 does not explicitly discloses the broadcast mechanism (Input Switching Unit 3, see Lino '115 Fig. 10) is located in one of the plurality of interconnection networks (noted that FIG. 1 comprises a working switch network 101, a spare switch network 102 having the same structure as the working switch network 101, an input switching unit 103 and an output switching unit 10; see Lino '115 col. 1, line 26+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 13 above.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teraslinna '990 and Lino '115 as applied to claim 13 above, and further in view of in view of Azuma '150.

Regarding Claim 16, both Teraslinna '990 and Lino '115 do not explicitly disclose that the broadcast mechanism is located in **each** of the plurality of interconnection networks (noted that in the example of FIG. 2A, a failure has occurred on the link between node A and node C. Node A and node C at the respective ends of the failed link detect the failure and enter a failure processing mode. Nodes A and C broadcast an alarm message for notifying the other nodes that a failure has occurred. The process executed so far concerns the broadcast phase, see Azuma '150, col. 5, line 10+. Nodes A and C enter the computation phase after broadcasting the alarm message. Node B receives the alarm message broadcast from node A and node C. After recording the content of the message, node B broadcasts the alarm message; see Azuma '150 col. 5, line 17+).

This limitation is taught by Azuma '150. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Teraslinna '990 and Lino '115, with Azuma '150 for the purpose of providing a telecommunication node, a restoration method and a telecommunication network, wherein the aforementioned problems are eliminated; see Azuma '150, col. 1, line 62+. The motivation being that by providing information relating to a failure, it can determine alternate paths.

10. Claim 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teraslinna '990 in view of Lino '115.

Regarding Claim 17, Teraslinna '990 does not explicitly discloses each of the input components references its associated fault data structure in determining which of the plurality of interconnection network through which to send a particular packet (noted that output table (1) information is referred to when the malfunctioning switch is included in the malfunction stage (c) (the final stage) of the switch network 1 so as to change a transmission path to bypass the malfunctioning switch. That is, the output table (1) storing unit 10 stores the output table (1) information which indicates each switch in the switch network 1 in relation to transmission paths each of which bypasses each switch in the switch network 1; see Lino '115, col. 6, line 45+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 13 above.

Regarding Claim 18, Teraslinna '990 does not explicitly discloses the fault data structure includes an output availability indication (output table 10, see Lino '115 Fig. 5; and note that the selecting unit 11 serves as a path selecting means for selecting a transmission path which bypasses a malfunctioning switch. That is, when a malfunction occurs in one of the switches in the switch network 1, the selecting unit 11 selects a transmission path which bypasses the malfunctioning switch based on the input table (1) information, the output table (1) information, the input table (2) information and the output table (2) information; see Lino

'115, col. 6, line 66+) of which of the plurality of interconnection networks through which its associated input component may send packets (note that a storing unit which stores table information indicating a plurality of routes each of which bypasses one of the switches in the switch network, each of the routes being indicated in relation to one of the inputs and outputs of the switch network; see Lino '115, col. 3, line 30+).

This limitation is taught by Lino '115. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Teraslinna '990 as taught by Lino '115 for the same reason stated in Claim 13 above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 703-605-1531. The examiner can normally be reached on M-F: 9:5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Olms can be reached on 703-305-4703. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Ian N Moore
Examiner
Art Unit 2661

INM
8/29/2003